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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,118	08/11/2006	Patrick Linder	635.46415X00	6056
20457 7590 10/02/2007 ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			EXAMINER HAGAN, SEAN P	
			ART UNIT 2828	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/589,118

**Applicant(s)**

LINDER, PATRICK

**Examiner**

Sean Hagan

**Art Unit**

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11 August 2006; 4 January 2007</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1 through 15 originally presented for examination 11 August 2006. Claims 1 through 15 amended by preliminary amendment received 11 August 2006. Claims 1 through 15 are pending in this application.

### ***Information Disclosure Statement***

2. The information disclosure statement filed 11 August 2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Specification***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.
4. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

5. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The abstract of the disclosure is objected to because it exceeds 150 words and contains phrases that can be implied. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 through 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Fenner (US Patent 3,482,189) in view of Mattori et al. (Mattori, US Patent 6,081,539).

9. ***Regarding claim 1***, Fenner discloses, "Including a light source unit" (Fig. 1, pt. 13). "A mirror unit" (col. 2, lines 69-72). "A support unit" (col. 7, lines 4-14). "An exit window having an opening" (col. 3, lines 12-19). "A pressure-generating element" (col. 7, lines 4-14). "The light source unit and the pressure-generating element being contained in the support unit" (col. 7, lines 4-14). "Which exhibits a longitudinal axis running substantially parallel to the generated light beams" (col. 7, lines 4-14). "A force

Art Unit: 2828

being generated with the pressure-generating element" (col. 7, lines 4-14). "Which force acts on the light source unit" (col. 7, lines 4-14). Fenner does not disclose, "Wherein at least one of the mirror unit and the exit window is at least one of displaceable relative to the support unit and tiltable relative to the longitudinal axis by at least one displacement element in dependence on the force generated by the pressure-generating element on the light source unit." Mattori discloses, "Wherein at least one of the mirror unit and the exit window is at least one of displaceable relative to the support unit and tiltable relative to the longitudinal axis by at least one displacement element in dependence on the force generated by the pressure-generating element on the light source unit" (col. 8, lines 27-32). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Fenner with the teachings of Mattori. Cavity length tuning as taught by Mattori would enhance the teachings of Fenner by allowing for multiple tuning means.

10. The combination of Fenner and Mattori does not disclose, "The mirror unit and the exit window being arranged on opposite ends of the support unit." It would have been obvious to one of ordinary skill in the art at the time of invention to arrange mirror and output mirror at opposite ends of support mechanism, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

11. **Regarding claim 2**, Fenner discloses, "Wherein a force on the light source unit can be generated from a plurality of sides with the pressure-generating element" (Fig. 5,

Art Unit: 2828

pts. 51 and 52). "The force acting substantially perpendicularly to the longitudinal axis" (Fig. 5, pts. 51 and 52).

12. **Regarding claim 3**, Fenner discloses, "Wherein a force, uniform all around, can be generated on the light source unit with the pressure-generating element" (col. 3, lines 1-11).

13. **Regarding claim 4**, the combination of Fenner and Mattori does not disclose, "Wherein the pressure-generating element is of piezoelement type based on a material selected from the group consisting of sodium persulfate, sodium hydroxide, copper sulfate." It would have been obvious to one of ordinary skill in the art to utilize specific piezoelement types, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

14. **Regarding claim 5**, the combination of Fenner and Mattori does not disclose, "Wherein the piezoelement is a tourmaline crystal that has an electrically conductive film selected from the group consisting of silver and aluminum for contacting on the sides facing toward and away from the light source unit." It would have been obvious to one of ordinary skill in the art to utilize specific piezoelement types, since it has been held to be within the general skill of a worker in the art to select a known material on the basis

of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

15. **Regarding claim 6**, Fenner does not disclose, "Wherein the exit window is selected from the group consisting of a semitransparent window and a Brewster window." Mattori discloses, "Wherein the exit window is selected from the group consisting of a semitransparent window and a Brewster window" (Fig. 2, pt. 3). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Fenner with the teachings of Mattori for the reasons given above regarding claim 1.

16. **Regarding claim 7**, the combination of Fenner and Mattori does not disclose, "Wherein the exit window and the mirror unit are displaceable in such fashion that the light source unit is always arranged centrally between the exit window and the mirror unit." It would have been obvious to one having ordinary skill in the art at the time of invention to design both window and mirror to be displaceable, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

17. **Regarding claim 8**, Fenner discloses, "Wherein the displacement element comprises at least one piezoelement" (col. 7, lines 4-14).

Art Unit: 2828

18. **Regarding claim 9**, the combination of Fenner and Mattori does not disclose, "An insulation layer between the mirror unit and the support unit and between the exit window and the support unit." It would have been obvious to one of ordinary skill in the art at the time of invention to include an insulation layer since it was known in the art that elements that may be electrically or thermally conductive should be insulated when placed in positions that such conduction would be disadvantageous.

19. **Regarding claim 10**, Fenner discloses, "Wherein the light source unit is a laser diode unit of the semiconductor laser type" (col. 2, lines 52-56).

20. **Regarding claim 11**, Fenner discloses, "Including a light source unit" (Fig. 1, pt. 13). "A mirror unit" (col. 2, lines 69-72). "A support unit" (col. 7, lines 4-14). "An exit window having an opening" (col. 3, lines 12-19). "A pressure-generating element" (col. 7, lines 4-14). "The light source unit and the pressure-generating element being contained in the support unit" (col. 7, lines 4-14). "Which has a longitudinal axis running substantially parallel to the generated light beams" (col. 7, lines 4-14). "A force acting on the light source unit being generated with the pressure-generating element" (col. 7, lines 4-14). Fenner does not disclose, "The method comprising displacing at least one of the mirror unit and the exit window relative to the support unit and tilting said at least one of said mirror unit and exit window relative to the longitudinal axis by at least one displacement element in dependence on the force generated by the pressure-generating element on the light source unit." Mattori discloses, "The method comprising



Art Unit: 2828

displacing at least one of the mirror unit and the exit window relative to the support unit and tilting said at least one of said mirror unit and exit window relative to the longitudinal axis by at least one displacement element in dependence on the force generated by the pressure-generating element on the light source unit" (col. 8, lines 27-32). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Fenner with the teachings of Mattori for the reasons given above regarding claim 1.

21. The combination of Fenner and Mattori does not disclose, "The mirror unit and the exit window being arranged at opposite ends of the support unit." It would have been obvious to one of ordinary skill in the art at the time of invention to arrange mirror and output mirror at opposite ends of support mechanism, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

22. **Regarding claim 12**, Fenner discloses, "Including generating said force on the light source unit from a plurality of sides with the pressure-generating element" (Fig. 5, pts. 51 and 52). "The force acting substantially perpendicularly to the longitudinal axis" (Fig. 5, pts. 51 and 52).

23. **Regarding claim 13**, Fenner discloses, "Wherein said force generated on the light source unit is uniform all around" (col. 3, lines 1-11).

Art Unit: 2828

24. **Regarding claim 14**, the combination of Fenner and Mattori does not disclose, "Including displacing the exit window and the mirror unit in such fashion that the light source unit is always arranged centrally between the exit window and the mirror unit." It would have been obvious to one having ordinary skill in the art at the time of invention to design both window and mirror to be displaceable, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

25. **Regarding claim 15**, Fenner does not disclose, "Including setting the spacing between the mirror unit and the exit window such that the distance of said spacing is exactly equal to, or a multiple of, half the wavelength of interest." Mattori discloses, "Including setting the spacing between the mirror unit and the exit window such that the distance of said spacing is exactly equal to, or a multiple of, half the wavelength of interest" (col. 2, lines 11-22). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Fenner with the teachings of Mattori for the reasons given above regarding claim 1.

### **Conclusion**

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shoshan (US Patent 4,229,710) cited as being pertinent to combination of pressure-tuned lasers with cavity length tuning.

Art Unit: 2828

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean Hagan whose telephone number is 571-270-1242.

The examiner can normally be reached on Monday-Friday 7:30 - 5:00.

28. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun O. Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

29. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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